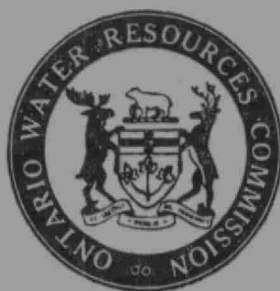


STANDARDS DEVELOPMENT BRANCH OMOE  
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THE  
ONTARIO WATER RESOURCES  
COMMISSION  
  
WATER POLLUTION SURVEY  
  
of the  
  
TOWNSHIP OF KING  
  
COUNTY OF YORK

1966

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Report on a water pollution  
survey of the township of King,  
county of York.  
80504

REPORT

on a

WATER POLLUTION SURVEY

of the

TOWNSHIP OF KING

County of York

April 1966

Division of Sanitary Engineering

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## R E P O R T

### ONTARIO WATER RESOURCES COMMISSION

#### INTRODUCTION

Field investigations necessary to accomplish a water pollution survey were made of the Township of King during the month of October 1965. The purpose of the survey was to locate and record all significant sources of water pollution within the township. Surveys of this nature are conducted routinely and upon request throughout the Province of Ontario by the Ontario Water Resources Commission as a basis for evaluating any existing or potential sources of pollution.

Recommendations are made pertaining to water pollution abatement and the Commission expects that corrective measures will be taken by those concerned.

#### I GENERAL

The Township of King with a 1965 assessed population of 13,519, according to the Ontario Department of Municipal Affairs 1966 Municipal Directory is situated in the north-west corner of York County. The information for the following brief description of the top soils in the Township of King was gained from the Soil Survey of York County, Report No. 19 of the Ontario Soil Survey prepared by the Experimental Farms Service, Canada Department of Agriculture and the Ontario Agricultural College.

King clay loam, King silt loam, Monaghan clay loam, Monaghan silt loam, Pontypool sandy loam, Schomberg clay loam, Brighton sandy loam and Brighton sandy loam over gravel are the main type of top soils within the Township of King.

A fairly broad expanse of heavy textured soils occur, in the Township of King developed on materials consisting of limestone and shale till intermixed with lacustrine materials. The presence of the till materials allow for fairly free movement of water through the profile and has facilitated internal drainage. Two series were mapped in this group, the King and Monaghan. The King series is the well drained member of the King catena and the Monaghan is the imperfectly drained member.

Pontypool sandy loam is a soil developed on poorly sorted sands. This material was deposited by glacio-fluvial action and it is calcareous. The soil is well drained to excessively drained on irregular steeply sloping topography.

A fairly large proportion of the soils of York County has developed on well sorted sandy materials deposited by still or slowly moving water. These outwash materials assume the form of sand bars, outwash plains or beaches. Brighton sandy loam is found on coarse sandy outwash material and has smooth gently sloping topography. The soil is well drained because the porosity of the materials facilitates the rapid percolation of moisture. Brighton sandy loam over gravel is underlain by well sorted gravel and is



well drained.

The Schomberg soils have been formed from lacustrine deposits which consist of alternate layers of calcareous silt and clay. The topography is smooth moderately sloping and the soil is susceptible to sheet erosion. Internal drainage is slow and external drainage is high.

These soil characteristics indicate that some areas within the township would be unsuitable for development on private individual sewage disposal systems.

## II WATER USES

### (1) Municipal Water Works

There are four municipal water works systems in the township and these are discussed under the area each system services.

(a) Police Village of King City - Water for residents of the police village is obtained from two deep drilled wells. A third well is available but is seldom used because of a relatively poor yield. Water is pumped from the wells to the distribution system and a 100,000 gallon standpipe.

No treatment is provided the raw water. Chemically the water from one of the two wells contains excessive concentrations of iron while the other is chemically satisfactory. To reduce the iron concentration the operator endeavours to provide a quantity of dilution water from the satisfactory supply to mix with the well water containing the excessive amounts of iron. As a further control

measure the mains are flushed through the hydrants on a routine basis. Reportedly very few complaints of rusty water have been received so it appears as if the present preventive measures have been successful in controlling this problem.

Some difficulties have been encountered with the bacteriological quality of the water. The cause of this problem has been isolated and the necessary corrective action is being taken. Two hypochlorinators are available at the supply and if it is required, chlorination of the supply can be effected quickly.

(b) Police Village of Nobleton - Residents of the community are supplied with water taken from two deep drilled wells. The water is pumped from the wells to the distribution system and a 100,000 gallon standpipe. Chemically the water is hard, high in alkalinity, contains iron in excess of the Commission's maximum objective of not greater than 0.3 ppm and a natural fluoride content of 0.1 ppm. Bacteriologically the water quality is satisfactory.

(c) Community of Oak Ridges - Residents of the Township of King in the Oak Ridges area are supplied with water from a deep drilled well. Water is pumped from the well to two zeolite water softening units. The softeners are also used to provide some removal of iron.

Chemically the treated water is soft and contains iron in excess of the Commission's maximum objective of not greater than 0.3 ppm. No problems have been encountered as a result of the

excessive iron content.

Bacteriologically the water quality is not entirely satisfactory and requires close supervision.

(d) Police\_Village\_of\_Schomberg - Water for residents of the police village is obtained from an overflowing well. The water is pumped through two cation exchangers to the distribution system. The ion exchangers are used for iron removal and water softening. The treated water when analysed chemically is soft and usually contains iron in concentrations less than the OWRC maximum objective of not greater than 0.3 ppm, which is satisfactory. The bacteriological water quality is generally satisfactory.

(2) Private Water Works

(a) Community\_of\_Ansnorveldt - The York County Health Unit reported that there is a community owned well water supply serving approximately 37 residences. The water quality data indicates that the water is bacteriologically satisfactory.

(b) Ontario\_Hospital - Water is pumped from three wells to a covered concrete ground reservoir chlorinated and flows by gravity from this reservoir to a second reservoir located under the powerhouse. The water is then pumped to a pressure tank which rides on the distribution system. Softening is provided for water used in the hot water supply.

The York County Health Unit inspects this system and reports that the operation and maintenance are satisfactory.

(c) Toronto Gymnosophical Society and Glen Echo

Water Works - This society owns a 100-acre park in the Township of King south of the Aurora Sideroad on the west side of the road allowance between Concessions VI and VII. There is one residence and one bathhouse constructed on the property. In addition a large camping area is provided.

Water for potable purposes is obtained from two drilled wells. Water for the sanitary facilities is obtained from an infiltration well located on the bank of the small watercourse that traverses the property. The water taken for potable purposes appears to be of satisfactory chemical and bacteriological quality.

(d) Shrine of Our Lady of Grace - The Retreat House is operated by the Augustinian Fathers and is situated on the shores of Lake Maria. Water is obtained from the lake and passed through "Flow Rite" filters located in the Retreat House and the Monastery. No chlorination treatment is provided.

Chemically and bacteriologically the water quality is satisfactory.

(e) Shell Canada Limited Service Centre - Water is obtained from a drilled well and pumped to a 10,000 gallon storage tank and subsequently pumped to the distribution system. Softening is effected but the water is not chlorinated. The treated water is generally satisfactory both chemically and bacteriologically.

### (3) Industrial Water Supply

Sky-Line Farms Limited - Water for this poultry processing plant is taken from Kettleby Creek and pumped to the treatment plant located west of the industry on the north side of the Aurora Sideroad. The water is treated with lime, settled, filtered and chlorinated prior to discharging to an underground reservoir. The water is pumped from the reservoir to the distribution system.

During periods of excessive precipitation and surface runoff the raw water becomes very turbid but otherwise the water is chemically and bacteriologically satisfactory.

### (4) Recreational Uses

Some recreational use is made of the surface waters of the Township of King. Fishing is probably the largest single recreational use made of these waters.

### (5) Agricultural Uses

There are extensive agricultural uses made of the surface waters. From actual observation it was noted that there was a considerable number of ponds constructed on the various farms in the township. In addition the streams are probably used for cattle watering.

In the northeast section of the township lies the Holland Marsh area where vegetable gardening is the main activity. This area has been reclaimed by a system of drainage canals. The soil in this area is loose with a high organic content, and is

particularly attractive because of the availability of water.

Irrigation of the crops is required to provide good germination and stand of plants and to control wind erosion. The Ontario Agricultural College provides a continuous service for soil testing and directs the soil enrichment programme. Commercial fertilizers are applied to the soil just prior to planting time.

Insecticides and fungicides are introduced into the soil with the seed in the onion and carrot crops. Insecticides and herbicides are used before and after growth with approximately three or four applications depending on weather conditions. It should be noted that extreme care and caution are required when applying these chemicals and in all cases adequate protection should be provided the watercourses.

### III WATER POLLUTION

#### (1) Sanitary Waste Disposal

Sanitary wastes are disposed of by means of private individual sewage disposal systems which usually take the form of a septic tank and subsurface tile bed. These systems are installed under the supervision of the York County Health Unit. The health unit reported having received very few complaints regarding malfunctioning septic tank systems. It is therefore concluded that present individual methods of sewage disposal are satisfactory.

While there are, at present, no municipally owned communal sewage disposal systems there has been a proposal made for such a

system to serve the Police Village of Nobleton. A preliminary engineering report prepared by Proctor and Redfern, Consulting Engineers, dated January 22, 1965, regarding the proposed sewage works system for the Police Village of Nobleton has been received by this Commission.

The nearest receiving stream for a sewage treatment plant effluent at Nobleton would be the east branch of the Humber River located about 1.5 miles southeast of the municipality. Nobleton is situated in an area which has been designated as the headwater zone in a Metropolitan Toronto and Region Conservation Authority report dated June, 1963, and titled "Pollution Control and Recreation in the Metropolitan Region". Within this area the MTRCA intends to develop maximum recreational facilities. A quotation from the report reads: "Development above reservoir sites should be serviced by sewage disposal facilities which prevent the direct discharge of wastes to watercourses in the headwater zone". The authority has purchased lands downstream from Nobleton on which it proposes to construct the King Creek Reservoir.

The Commission is interested in providing protection for this proposed water use and therefore has made acceptance of the proposed sewage works system dependent on the system being capable of producing an effluent meeting the OWRC stream objectives.

Aside from Nobleton, no active consideration for the provision of communal sewage works systems has been given to the other

main urbanized areas of the township, namely; the police villages of King City and Schomberg and the communities of Oak Ridges and Ansnorveldt.

(2) Private Waste Disposal Systems

The following are the large private effluent producing sewage works systems in the Township of King.

(a) Ontario Hospital - Raw sewage from the hospital is screened and then pumped to a five acre waste stabilization pond. In addition, a three acre storage pond is provided from which the stabilized wastes will be disposed of by spray irrigation. It has not been necessary to spray the wastes as the ponds have proven capable of retaining the total waste flow.

(b) Shell Canada Limited Service Centre - Raw sewage from the service centre is discharged to an extended aeration activated sludge plant with effluent chlorination. In addition, during the summer months, the effluent is passed through a sand filter before being discharged to the East Humber River.

There were three recommendations presented regarding the operation of this sewage works in the OWRC report dated May 14, 1965. It was recommended that the effluent sand filters be used, the chlorination equipment be repaired and a monthly sampling programme be initiated. Shell Canada Limited should provide close supervision of the operation and maintenance of this sewage works system.



(c) St. Andrew's College - Wastes from the college are directed to a conventional activated sludge plant designed for a flow of 40,000 gpd with a sewage strength of 150 ppm of 5-Day BOD and 180 ppm of suspended solids. The population of the college fluctuates.

Due to blinding of the screening at the influent works raw sewage is by-passing the treatment units to the effluent sewer which discharges to Aurora Creek. It has been suggested by the OWRC that the primary treatment unit be by-passed and that the raw sewage be directed to the aeration section of the plant. An alternate solution could be the provision of a comminuting device at the influent works.

Because of this operating difficulty the final effluent from this plant usually exceeds the Commission's maximum objectives of not greater than 15 ppm for both 5-Day BOD and suspended solids. Closer supervision and attention to plant operation is required at this sewage works.

### (3) Industrial Waste Disposal

Sky-Line Farms Limited, a poultry processing plant is located on the north side of the Aurora Sideroad just west of Kettleby in Lot 28, Concession 5, Township of King.

As previously described in this report, water for industrial use is taken from Kettleby Creek. Liquid industrial wastes flow by gravity to a sump approximately 6 feet long, 10 feet wide, and 6 feet deep. The wastes are then pumped from this sump to a

"Kason" vibrating 60-mesh screen. The liquid that passes through the screen flows by gravity back to an over and under baffled settling tank approximately 15 feet long, 10 feet wide and 6 feet deep. The waste flows by gravity from the settling tank to a concrete chamber from where it is pumped to an aerated lagoon which discharges to Kettleby Creek.

Sanitary wastes are discharged to a septic tank and sub-surface tile bed system.

The Division of Research of the Ontario Water Resources Commission has performed a study to determine the treatment efficiencies obtained by these waste treatment facilities. The lagoon effluent to Kettleby Creek has a 5-Day BOD of from 40 to 60 ppm and suspended solids content of from 25 to 60 ppm. This treated waste does not meet OWRC objectives for discharge to a watercourse. The aeration system in the lagoon is being modified in an attempt to improve treatment efficiency. The company should take whatever action is necessary to improve the effluent quality of this waste disposal system.

#### (4) Refuse Disposal

##### (a) Municipal -

The municipality has provided two five acre sites one in Lot 6, Concession II, another in Lot 5, Concession III and one two acre site in Lot 28, Concession X for the disposal of municipal refuse.

The sites appear to be suitably located to provide adequate protection for the surface waters.

(b) Private

(1) Lot 27, Concession X - Mr. and Mrs. Loyd McNeil, owners of this property have requested that the OWRC give an opinion as to the suitability of this site for use as a sanitary landfill, from a ground and surface water perspective. The site appears suitable from a surface water point-of-view in that adequate protection is provided these waters. However, it was deemed necessary to conduct a ground-water survey to determine the suitability of this site from this perspective. The results of this survey are not available at this time.

(2) Lake Maria Farm Sanitary Landfill - Ground and surface-water investigations were made by the OWRC on June 3, 1964 to determine the suitability of two sites for the proposed use of a sanitary landfill at Lake Maria Farm owned by the Augustian Fathers. The results of these investigations indicated that the sites were so located that adequate protection could be provided the waters if certain precautions were taken. If the sites are used for sanitary landfill purposes provision should be made to retain all leachate emanating from the refuse. Refuse must be deposited above the high water table which might necessitate the haulage of fill to raise the ground level above the water table.

#### IV DISCUSSION OF LABORATORY RESULTS

A review of the water quality data indicates the need for more stringent water quality control measures within the township. The Humber River and its tributary, Cold Creek drain a very small section of the south-west corner of the township. There is no significant impairment of these watercourses within the township. The Commission collects samples on a routine basis for sampling point H-32.6. This point is a monitoring station from which samples are collected to provide continuous or near-continuous information on the nature and extent of pollutants effecting water quality.

The East Humber River with its headwaters in the township and flowing south to its confluence with the Humber River, drains the southern part of the municipality. Shell Canada Limited Service Centre Water Pollution Control Plant discharges a treated effluent to the East Humber River. In general the chemical and bacteriological quality of the plant effluent is satisfactory. However, careful supervision and control at the plant and chlorination of the final effluent from ice break-up in the spring till freeze up in the fall is required to provide adequate protection for this stream. Water Quality data on the East Humber River reveals that its chemical and bacteriological quality is generally satisfactory.

The Schomberg River drains the northern section of the township. The water quality of this watercourse is deteriorated bacteriologically as it flows through the Police Village of Schomberg.

East Creek a tributary of the Schomberg River receives some agricultural drainage which is reflected in the poor bacteriological quality of this stream. Chemically the Schomberg River and East Creek are both generally satisfactory at the police village.

The Commission has established a water quality monitoring point on the Schomberg River at Highway No. 11. The collected data reveals that the river is chemically and bacteriologically satisfactory at this point. A treated waste from the Town of Bradford lagoon is discharged to the river downstream from Highway No. 11. A sample collected downstream from this point on October 14, 1965 when examined, revealed deterioration of the bacteriological quality.

Sky-Line Farms Limited discharges a treated waste to Kettleby Creek which drains to the south drainage canal. A study performed by the Commission indicates that a greater degree of treatment efficiency is required to make the wastes of acceptable quality for discharge to the stream. The OWRC expects that Sky-Line Farms Limited will make the improvements to the waste treatment facilities necessary to produce a final effluent of satisfactory quality.

Aurora Creek a tributary of the Holland River drains a small section of the township just west and north of Aurora. St. Andrew's College Water Pollution Control Plant discharges a treated waste to this stream. The water quality of the stream is deteriorated downstream from the Aurora Water Pollution Control Plant. The

effluent from the St. Andrew's College Water Pollution Control Plant is generally of poor quality. The college should take the action necessary to improve the plant effluent quality.

#### V SUMMARY AND CONCLUSIONS

A water pollution survey was made of the Township of King. The existing top soil formation in the township indicates that development should not take place in certain areas where waste disposal is to be achieved by means of septic tank and subsurface tile field systems.

There are four municipal water works systems in the township. The Police Village of King City water works requires close supervision and good routine maintenance to control the chemical quality. The bacteriological quality needs to be closely checked. The operator appears to have located the cause of the poor bacteriological quality and he is supervising the necessary corrective action. The Police Village of Nobleton water works supplies water that is bacteriologically satisfactory. The iron content in the water is in excess of the Commission's maximum objective of not greater than 0.3 ppm. The water quality of the Community of Oak Ridges is bacteriologically unsatisfactory. Chemically the iron content is in excess of the Commission's recommended maximum of 0.3 ppm. The Police Village of Schomberg water works supplies water that is generally chemically and bacteriologically satisfactory.

There are five private water works systems in the township. The water supplied is generally chemically and bacteriologically satisfactory.

There is one industrial water supply, owned and operated by Sky-Line Farms Limited. The supply appears satisfactory.

Surface waters in the township are used quite extensively with the principal agrarian uses being cattle watering and irrigation. Caution should be taken when applying pesticides to crops that this poisonous material does not gain access to the surface waters.

There are no municipally owned communal sewage disposal systems in the Township of King. The existing method of employing private individual sewage disposal systems does not appear to present a water pollution problem.

A preliminary engineering report has been received by the OWRC for a sewage disposal system to service the Police Village of Nobleton. The Commission requires that a sewage disposal system installed in this area be capable of producing an effluent meeting the OWRC stream objectives.

There are three private sewage disposal systems in the township. The Ontario Hospital sewage disposal system is satisfactory. The effluent sand filters need to be rehabilitated and closer supervision of the chlorination of the final effluent is required at the Shell Canada Limited Service Centre Water Pollution

Control Plant. St.Andrew's College should take the necessary action to correct the operating difficulties at its water pollution control plant.

Sky-Line Farms Limited are taking action to improve the efficiency of its waste treatment facilities.

The disposal of municipal refuse does not present a water impairment problem.

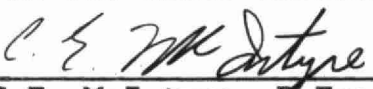
Water Quality data indicates the need for more stringent water impairment prevention practices within the township.

#### RECOMMENDATIONS

1. Careful consideration should be given to the selection of areas for proposed large subdivision type development.
2. Caution should be exercised in the practice of applying chemicals for the control of insects and weeds. These chemicals should not be allowed to gain access to a watercourse.
3. Shell Canada Limited should rehabilitate the effluent sand filters and provide closer supervision of the final effluent chlorination at its service centre Water Pollution Control Plant.
4. St.Andrew's College should take the action necessary to correct the operating difficulties at its water pollution control plant.
5. Sky-Line Farms Limited should continue the efforts to improve the treatment efficiency of its waste treatment facilities.

/elb

Approved by

  
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Engineer's Assistant.



## APPENDIX

### GLOSSARY OF TERMS

Bacteriological Examinations - The Membrane Filter technique is used to obtain a direct enumeration of coliform organisms. These organisms are the normal inhabitants of the intestines of man and other warm blooded animals. They are always present in large numbers in sewage and are, in general, relatively few in number in other stream pollutants. The results are reported as M.F. coliform count per 100 millilitres.

Biochemical Oxygen Demand (BOD) - The BOD test indicates the amount of oxygen required for stabilization of the decomposable organic matter found in the sewage, sewage effluent, polluted waters or industrial wastes by aerobic biochemical action. The time and temperature used are 5 days and 20°C respectively.

Solids - The analyses for solids include tests for total, suspended and dissolved solids. The former measures both the solids in solution and in suspension. Suspended solids indicate the measure of undissolved solids of organic or inorganic nature, whereas the dissolved solids are a measure of those solids in solution.

Turbidity - Turbidity is a measure of the fine suspended solids in water such as silt and finely divided organic matter. Where suspended solids values approach 20 parts per million or less, the results are usually reported as turbidity in silica units.

### WATER QUALITY AND EFFLUENT OBJECTIVES

The desirable objectives for all surface waters in the Province of Ontario are as follows:

5-Day BOD	- not greater than 4 ppm
M.F. Coliform Count Median Value	- not greater than 2,400 per 100 ml.
Phenolic Equivalents - average	- not greater than 2 ppb
- maximum	- not greater than 5 ppb
pH Range	- 6.7 to 8.5

A few pertinent maximum concentration limits of contaminants in storm sewers, sewage treatment plant and industrial waste effluents are listed on the following page. It is noted that adequate protection for surface waters, except in certain specific instances influenced by local conditions, should be provided if the following concentrations and pH range are not exceeded.

5-Day BOD  
Suspended Solids  
Phenolic Equivalents  
Ether Solubles (oil)  
pH Range

- not greater than 15 ppm
- not greater than 15 ppm
- not greater than 20 ppb
- not greater than 15 ppm
- 5.5 to 10.6

TOWNSHIP OF KING

TABLE I

Laboratory Results - Humber River,  
East Humber River and Outfalls.

<u>Sampling Point No.</u>	<u>Description</u>	<u>Date</u>	<u>5-Day BOD (ppm)</u>	<u>Total (ppm)</u>	<u>Solids Susp. (ppm)</u>	<u>Diss. (ppm)</u>	<u>Turbidity in Silica Units</u>	<u>M.F. Coliform Count/100 ML</u>
HC-32.6	Cold Creek at Bolton Rd.	June 27/62	1.1	338	-	-	12.0	320
		May 9/63	1.7	326	-	-	5.5	44
		Sept. 24/64	58	734	38	696	23	180
		Aug. 16/65	0.4	370	10	360	-	27,000
H -32.6	Humber River at Peel-York County Line.	June 27/62	2.8	280	-	-	7.0	11,000
		May 9/63	2.8	286	-	-	7.5	32
		Oct. 16/64	1.5	274	-	-	9.0	81,000
		Nov. 23/64	2.8	318	-	-	5.0	16,000
		Dec. 14/64	2.4	312	18	294	5.5	40,000
		Jan. 19/65	3.8	362	11	351	4.0	21,000
		Mar. 16/65	3.6	264	15	249	5.5	350
		Mar. 17/65	1.7	-	26	-	6.5	19,000
		July 20/65	2.3	324	18	306	13.5	50,000
		Aug. 16/65	1.0	324	20	304	-	11,000
		Aug. 25/65	2.4	286	28	258	-	890
		Nov. 19/65	1.3	-	-	-	12	400
HE-37.0	East Humber River at the King City Sideroad.	June 27/62	2.2	370	-	-	12.5	9,000
		May 9/63	2.5	360	-	-	23.0	1,000
		Sept. 24/64	2.5	428	16	412	8.5	20,000
		Aug. 16/65	2.8	542	19	523	-	340

TABLE I-1

<u>Sampling Point No.</u>	<u>Description</u>	<u>Date</u>	<u>5-Day BOD (ppm)</u>	<u>Total (ppm)</u>	<u>Solids Susp. (ppm)</u>	<u>Diss. (ppm)</u>	<u>Turbidity in Silica Units</u>	<u>M.F. Coliform Count/100 ML</u>
HE-36.0(T)	Shell Canada Ltd. Service Centre WPCP final effluent.	June 27/62	2.4	794	10	784		8,000
		Sept. 20/62	17	740	30	710		20
		April 25/63	13	928	4	924		-
		May 9/63	6.2	744	11	733		5,000
		Aug. 28/63	5	652	15	637		35,000
		Jan. 14/64	7.2	1088	19	1069*		-
		May 7/64	35	664	74	590*		4,400
		Sept. 23/64	10	808	10	798		143,000
		Oct. 26/64	3.2	920	6	914*		-
		May 14/65	9.2	648	23	625		-
		Aug. 16/65	9.6	1166	121	1045		100
HE-36.0	East Humber R. at the West side of Hwy. #400.	June 27/62	0.9	436	-	-	3.3	700
		May 9/63	2.4	394	-	-	34.0	22,000
		Sept. 23/64	0.2	420	3	417	2.8	11,000
		Aug. 16/65	0.3	484	6	478		840
HE-28.6	East Humber R. at the King- Vaughan Town Line.	June 27/62	1.3	280	-	-	11.5	280
		May 9/63	2.6	484	-	-	45.0	2,800
		Sept. 23/64	1.1	286	7	279	5.5	10,000
		Mar. 22/65	1.8	320	6	314		62
		Aug. 16/65	0.9	340	11	329		390

TOWNSHIP OF KING

TABLE II

Laboratory Results - Schomberg River.

<u>Sampling Point No.</u>	<u>Description</u>	<u>Date</u>	<u>5-Day BOD (ppm)</u>	<u>Total (ppm)</u>	<u>Solids Susp. (ppm)</u>	<u>Diss. (ppm)</u>	<u>Turbidity in Silica Units</u>	<u>M.F. Coliform Count/100 ML</u>
HOS-22.3	Schomberg R. at Lloydton Rd. just below Lloydton.	June 14/64	1.8	304	-	-	5.5	8,000
		July 30/63	2.2	298	31	267	214	5,000
		Nov. 19/64	1.8	322	2	320	-	50
		Oct. 14/65	1.2	336	3	333	-	200
HOSE-21.4	East Creek at road to Hwy. #27.	June 14/62	2.8	388	-	-	38	85,000
		July 30/63	3.8	398	31	367	240	34,000
		Nov. 19/64	2.5	390	16	374	-	11,000
HOS-21.1	Schomberg R. 100 ft. below junction with East Creek.	Sept. 6/61	1.0	316	-	-	4	196
		June 14/62	2.4	272	-	-	8.0	53,000
		July 30/63	1.8	282	11	271	-	8,300
		Nov. 19/64	2.0	334	7	327	-	8,400
		Oct. 14/65	2.3	316	2	314	-	215,000
HOS-21.0	Schomberg R. at culvert north of Creamery	June 14/62	2.4	282	-	-	4.2	47,000
		Nov. 19/64	2.5	336	7	329	-	14,400
		Oct. 14/65	2.0	302	3	299	-	24,000
HOS-20.9	Shomberg R. at the road into the fair grounds.	June 14/62	5.8	320	-	-	13.5	7,900,000
		July 30/63	2.1	316	10	306	-	130,000
		Nov. 19/64	2.2	386	5	381	-	6,300
		Oct. 14/65	3.3	380	2	378	-	54,000

TABLE II - 1

<u>Sampling Point No.</u>	<u>Description</u>	<u>Date</u>	<u>5-Day BOD (ppm)</u>	<u>Total (ppm)</u>	<u>Solids Susp. (ppm)</u>	<u>Diss. (ppm)</u>	<u>Turbidity in Silica Units</u>	<u>M.F. Coliform Count/100 ML</u>
HOS-20.6	Schomberg R. at Hwy. #9.	June 14/62	3.0	320	-	-	13.5	43,000
		July 30/63	2.9	324	22	302	-	3,900
		Nov. 19/64	1.6	382	4	378	-	6,500
		Oct. 14/65	2.0	340	4	336	-	69,000
HOS-7.2	Schomberg R. at Hwy. #11 north side below junction with drainage canals.	June 14/62	2.2	296	-	-	10.0	670
		July 30/63	5.0	306	20	286	-	420
		Nov. 19/64	4.0	320	5	315	-	800
		Oct. 14/65	4.0	300	11	289	-	380
		Dec. 9/65	1.1	446	15	-	40	82
HOS-6.8	Schomberg R. just below Bradford outfalls.	Sept. 6/61	2.7	266	-	-	4	117
		July 31/63	4.5	284	10	274		410
		Oct. 14/65	3.2	304	11	293		11,000

TOWNSHIP OF KING

TABLE III

Laboratory Results - Sky-Line Farms  
Limited Waste Discharge and Kettleby Creek.

<u>Sampling Point No.</u>	<u>Description</u>	<u>Date</u>	<u>5-Day BOD (ppm)</u>	<u>Total (ppm)</u>	<u>Solids Susp. (ppm)</u>	<u>Diss. (ppm)</u>	<u>Turbidity in Silica Units</u>	<u>M.F. Coliform Count/100 ML</u>
HOSDCT- 15.9(T)	Sky-Line Farms Ltd. lagoon effluent.	June 17/65	22		10			
		July 15/65	55		72			
		July 22/65	25		35			
		July 29/65*	56		32			
		Aug. 5/65*	46		52			
		Aug. 16/65*	68		98			
		Sept. 1/65*	106		62			
		Sept. 9/65	88		40			
		Sept. 17/65	56		38			
		Sept. 24/65	56		100			
		Sept. 29/65	30		48			
		Oct. 1/65	65		38			
		Nov. 3/65	43		24			
		Nov. 5/65	43		23			
HOSDCT- 15.3	Kettleby Creek upstream from Sky-Line Farms Ltd. waste dis- charge.	Dec. 19/63	2.4	380	8	372	2.1	64
		July 2/64	2.0	240	3	237	-	-
		July 7/64	1.1	230	5	225	-	520
		Aug. 19/64	1.1	246	3	243	-	390
		June 25/65	1.0	182	4	178	-	54
		July 22/65	3.0	250	2	248	-	1,287**
		Aug. 16/65	34	256	13	243	-	717**
		Sept. 7/65	5.4	284	8	276	-	490**
		Sept. 9/65	1.0	254	2	252	-	-
		Sept. 24/65	1.3	324	1	323	-	-

TABLE III - 1

Sampling Point No.	Description	Date	5-Day BOD (ppm)	Total (ppm)	Solids Susp. (ppm)	Diss. (ppm)	Turbidity in Silica Units	M.F. Coliform Count/100 ML
HOSDCT- 15.3	Kettleby Creek upstream from Sky-Line Farms Ltd. waste dis- charge.	Sept. 29/65	1.5	272	9	263	-	76
		Oct. 12/65	0.6	336	7	329	-	286**
		Oct. 14/65	1.7	326	1	325	-	180
		Oct. 28/65	5.7	338	8	330	-	120
		Dec. 28/65	2.6	416	18	398	-	-
HOSDCT- 15.3(D)	Sky-Line Farms Ltd. lagoon effluent in ditch just prior to discharging to Kettleby Creek.	Dec. 19/63	27	624	93	531	30	899,000
		July 2/64	170	780	312	468	-	-
		July 7/64	170	660	250	410	-	4,800,000
		Oct. 19/64	5.0	426	40	386	-	4,300
		June 25/65	33	554	190	364	-	3,700
		July 22/65	21	466	80	386	-	17,333**
		Aug. 16/65	30	482	125	357	-	343,666**
		Sept. 7/65	19	486	80	406	-	8,533**
		Sept. 9/65	27	536	150	386	-	-
		Sept. 24/65	54	568	132	436	-	-
		Sept. 29/65	62	554	80	474	-	17,200
		Oct. 12/65	19	592	58	534	-	10,270**
		Oct. 14/65	16	428	38	390	-	21,000
		Oct. 28/65	22	458	42	416	-	25,900
		Oct. 28/65	17	544	69	477	-	-
HOSDCT- 15.0	Kettleby Creek downstream from Sky-Line Farms Ltd. waste dis- charge.	Dec. 19/63	6.4	356	29	327	-	153,000
		July 2/64	22	344	80	264	-	-
		July 7/64	24	320	30	290	-	850,000
		Aug. 19/64	1.1	254	2	252	-	380
		Nov. 19/64	1.7	310	4	306	-	66
		June 25/65	7.6	262	31	231	-	124
		July 22/65	6.6	298	15	283	-	4,500**
		Aug. 16/65	7.2	262	24	238	-	23,596**
		Sept. 7/65	4.4	314	24	290	-	2,433**



TABLE III - 2

<u>Sampling Point No.</u>	<u>Description</u>	<u>Date</u>	<u>5-Day BOD (ppm)</u>	<u>Total (ppm)</u>	<u>Solids Susp. (ppm)</u>	<u>Diss. (ppm)</u>	<u>Turbidity in Silica Units</u>	<u>M.F. Coliform Count/100 ML</u>
HOSDCT- 15.0	Kettleby Creek downstream from Sky-Line Farms Ltd. waste dis- charge.	Sept. 9/65	9.2	300	64	236	-	-
		Sept. 24/65	9.6	386	11	375	-	-
		Sept. 29/65	9.6	308	17	291	-	8,120
		Oct. 12/65	1.4	324	5	319	-	3,133**
		Oct. 14/65	2.6	328	5	323	-	270
		Oct. 28/65	4.1	346	26	320	-	1,700
		Dec. 28/65	0.8	416	18	398	-	-

TOWNSHIP OF KING

TABLE IV

Laboratory Results - Aurora Creek and  
St. Andrews College WPCP.

<u>Sampling Point No.</u>	<u>Description</u>	<u>Date</u>	<u>5-Day BOD (ppm)</u>	<u>Total (ppm)</u>	<u>Solids Susp. (ppm)</u>	<u>Diss. (ppm)</u>	<u>Turbidity in Silica Units</u>	<u>M.F. Coliform Count/100 ML</u>
HOA-18.8 (T)	St. Andrews College WPCP final effluent.	June 1/62	35	1160	54	1106	-	20
		June 8/62	40	1528	62	1466	-	70
		June 14/62	1.6	340	15	325	-	0
		Feb. 15/63	68	510	56	454	-	61,500***
		May 31/63	14	578	13	565	-	20***
		July 2/63	8.8	296	11	285	-	0
		July 31/63	165	1892	204	1688	-	7,800,000
		Sept. 20/63	35	1418	86	1332	-	101,000***
		Jan. 13/64	37	396	40	356	-	0
		Oct. 29/64	57	364	41	323	-	-
		Nov. 18/64	9.2	370	39	331	-	2
		Feb. 5/65	73	614	82	532	-	-
		Nov. 17/65	30	390	34	356	-	-
		Nov. 17/65	180	806	294	512	-	-
		Jan. 17/66	67	636	50	586	-	-
		Feb. 21/66	60	460	66	394	-	-
HOA-18.5	Aurora Creek at sideroad just north of St. Andrews College Road.	June 14/62	9.2	804	-	-	9.5	57,000
		July 2/63	26	618	-	-	26.0	-
		Nov. 18/64	14	816	14	802	-	35,000
		Oct. 13/64	11	724	15	709	-	-

\* Denotes Composite Sample.

\*\* Denotes Average Coliform Density for Three Samples.

\*\*\* Average Coliform Density From Two Samples.





LEGEND  
HE-23.6 SAMPLING POINT SHOWING STREAM AND MILEAGE  
HE-36.0 STREAM AND MILEAGE AT OUTFALL  
TYPE OF OUTFALL  
D - DITCH  
T - TREATED SEWAGE

ONTARIO WATER RESOURCES COMMISSION

**TOWNSHIP OF KING**  
**WATER POLLUTION SURVEY**  
**1966**

SCALE 0 1/2 2 MILES

DRAWN BY: W. R. E. DATE: MARCH 1966

CHECKED BY: DRAWING NO: 66-14